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# A Comparative Assessment of the Services' Management of Their Space Operations Personnel

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A COMPARATIVE ASSESSMENT OF THE SERVICES' MANAGEMENT  
OF THEIR SPACE OPERATIONS PERSONNEL

by

RICHARD K. JONES  
Lieutenant Colonel, USAF

This paper provides a comparative analysis of how the services manage their space operations personnel. It details how the services differ in their management, accounts for those differences by addressing each service's views of space operations, and identifies the pros and cons of each management approach. Finally, this paper attempts to provide an overall assessment of the services different management practices by addressing whether or not the needs of U.S. Space Command are being met.

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**A COMPARATIVE ASSESSMENT OF THE SERVICES' MANAGEMENT  
OF THEIR SPACE OPERATIONS PERSONNEL**

Space will become in the future what oceans have always been -- highways to discovery and commerce. But as with sea lanes, space lanes can be closed and can even be used as springboards for attack. . . . Assured access to space requires a healthy military space program.<sup>1</sup>

This quote from the President's National Security Strategy of the United States, dated August 1991, sets the stage for my research paper. I contend the most important ingredient for a "healthy military space program" is people. Military people. Military space operations people. The purpose of this paper therefore is to provide a comparative assessment of how the Air Force, Army, and Navy manage their space operations personnel. At this point, you are probably thinking to yourself, "Gee, this is just another paper on personnel policy." Well it's not. It's more than that. We should be managing our space operations personnel, as we do all other personnel, to accomplish missions which are derived from overall national security strategy.

As such, I'll first start with some background. Why is it even important how we manage our space operations personnel? What is the existing organizational structure for conducting space operations? What are the missions or tasks of space operations forces? What are the services' responsibilities in support of space operations? The answers to these questions will establish the framework within which the services manage their space operations personnel.

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Then, I will describe how each of the services manages its space operations personnel. I'll follow this by identifying the pros and cons of each services' management, and conclude with an overall assessment. Finally, I'll provide some recommendations based on my research.

Before I begin with the background, though, what is space operations? The definition I'll use for this paper is:

The space operations field involves real time operations of space systems as well as program formulation, policy planning, inspection, command, and direction of space systems activities including space surveillance, missile warning, satellite operations, space launch operations, and battle management, command, control and communications activities.<sup>2</sup>

## BACKGROUND

Why is it even important how we manage our space operations personnel? Because our military forces depend heavily upon space systems in order to accomplish their missions. As General Donald J. Kutyna, the Commander-in-Chief of U.S. Space Command (USCINCSpace) recently stated,

Space systems support soldiers, sailors, Marines and airmen based around the globe. Today, our forces are heavily dependent on the comparatively small, but highly capable and absolutely vital, force structure of space-based systems. In a future comprised of decreased, retrenched forces, we will rely even more on space. Space systems will always be first on the scene. They must continue to be high in priority.<sup>3</sup>

The absolutely critical role of space systems was clearly evident during Operation Desert Shield/Storm. Again, according to General Kutyna,

Operation Desert Storm demonstrated most convincingly that space systems are an essential element of our force posture. While we did not war in space, Desert Storm was the first campaign-level combat operation in which space was solidly integrated into combat operations and was vital to the degree of success achieved in the conflict.<sup>4</sup>

So, space systems are indeed important to our national defense. It was during the 1980s that the organizational structure was created for the conduct of space operations.

#### Organizational Structure

U.S. Space Command, a unified command, was activated September 23, 1985 and its mission statement follows:

The United States Space Command (USSPACECOM) exercises operational command over all forces assigned. USSPACECOM plans, coordinates, and employs forces to conduct those activities in space which support U.S. national objectives. It prepares operational plans for the conduct of military space operations. USSPACECOM assigns tasks to, and directs coordination among the subordinate component commands (Air Force Space Command, Naval Space Command, and U.S. Army Space Command) to ensure unity of effort in accomplishment of Command assigned missions.<sup>5</sup>



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The Air Force, Army, and Naval component commands of U.S. Space Command were established in the 1980s as well.

What are the missions or tasks for our space forces? Joint Pub 0-1, Basic National Defense Doctrine (proposed final pub dated 7 May 1991) states,

Space forces must accomplish four tasks: space control (combat against enemy forces in space and their infrastructure), force application (combat against enemy land, sea, air, and missile forces), force enhancement (support for land, sea, and air forces), and space support (launch capability).<sup>6</sup>

So, we have organizational structure and tasks. Now all we need are people. Who provides the people to the services' space commands and to U.S. Space Command? Obviously, the Air Force, Army, and Navy do. Let's take a look at the services' responsibilities in support of space operations.

#### Services' Responsibilities

JCS Pub 0-2, Unified Action Armed Forces (UNAAF), dated 1 December 1986, outlines each of the services' responsibilities in support of space operations. Each service (Air Force, Army, Navy, and Marine Corps) is assigned the specific responsibility of "organizing, training, and equipping, and providing forces to support space operations."<sup>7</sup> At this point, you could surmise that since each service has its own space command, since each service supports U.S. Space Command, and since each service is responsible for

organizing, training, and equipping forces for those commands, that each service would "manage" its space personnel in a similar fashion. Well, that's not the case. Let's next take a look at how the services actually do manage their space operations personnel.

### AIR FORCE, ARMY, AND NAVY MANAGEMENT OF SPACE OPERATIONS PERSONNEL

First, I'll start with the Air Force. The Air Force established space operations as a separate career field. What does that mean? It means an officer in the Air Force has the opportunity to devote his/her career to space operations. Take a look at Figure 1 on the next page. Figure 1, from Air Force Regulation 36-23, depicts the career path for a space operations officer, from second lieutenant through lieutenant colonel. There are a number of interesting items in this figure. First, notice that this career field chart is just for AFSC 20XX Space Operations Officers (AFSC stands for Air Force Specialty Code). There are currently 1484 officers, below the rank of colonel, with this specialty code (see Figure 2). Notice under the Breadth/Education column in Figure 1 the term UST. UST stands for Undergraduate Space Training, and is a 13-week course at Lowry AFB that "provides prerequisite training for DOD personnel in the basic knowledge and skills needed to perform operator duties associated with the space operations career field (20XX)."<sup>8</sup> In addition, the Air Force started offering a Masters Degree in Space Operations at the Air Force Institute of Technology in 1981.

Again looking at Figure 1, notice under the Alternative column the term Program Mgt (Provide Ops Perspective to SPO). This is an appropriate time to point out the Air Force, in accordance with JCS Pub 0-2, is also responsible "to provide launch and space support for the Department of Defense, except as otherwise assigned."<sup>9</sup> The Air Force's Space Systems Division, part of Air Force Systems Command, at Los Angeles AFB has the mission of building satellite systems for the DOD. Each system has a SPO --- a System Program Office. The Air Force does in fact, relative to space, "facilitate a crossflow/exchange of highly-qualified officers between AFSC and the operational commands."<sup>10</sup>

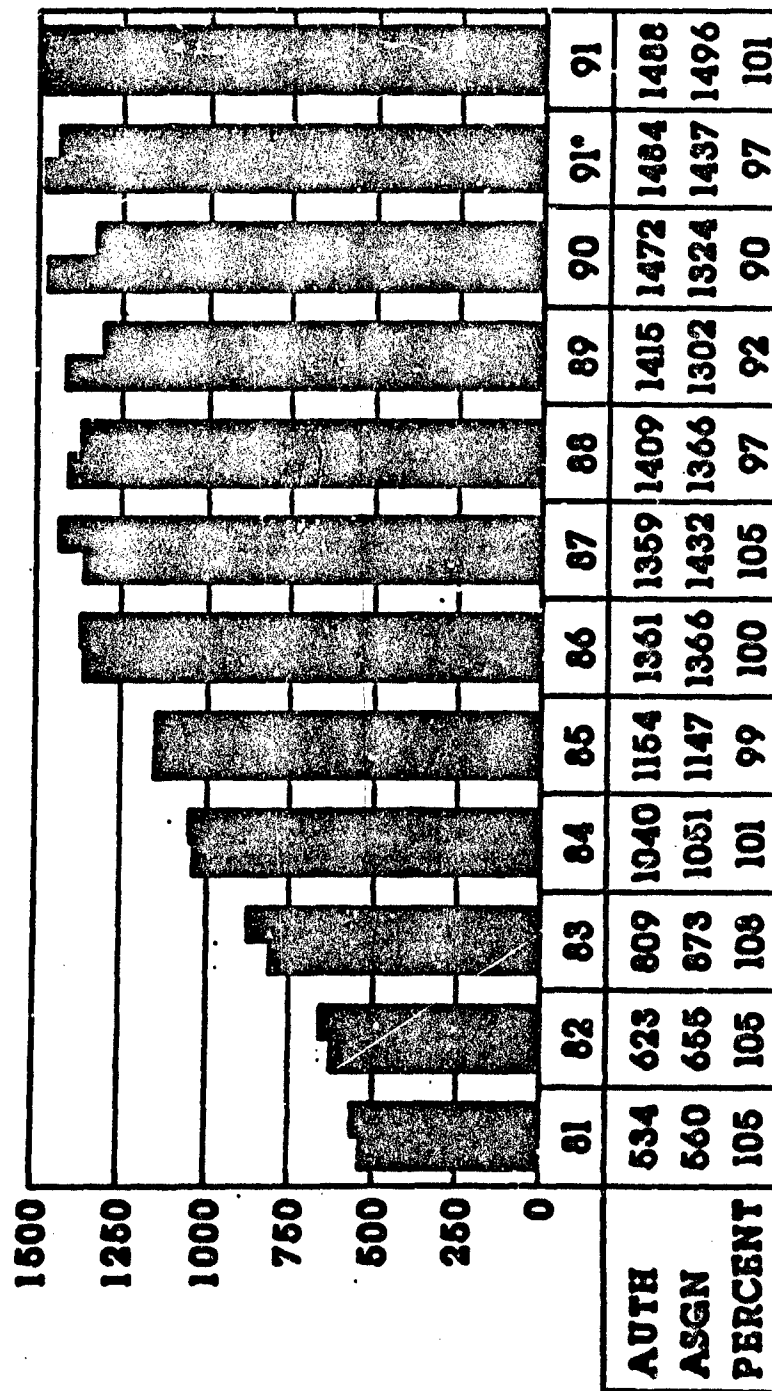
So, the Air Force has established a separate career field for space operations. It has established a specialty code (20XX) for this, and has outlined the career progression for the career field in Air Force Regulation (AFR) 36-23. There are 20XX "career monitors" at the Air Force Military Personnel Center (MPC) who manage the career field in terms of assignments. These career monitors track space operations personnel by their AFSC and manage their assignments in accordance with AFR 36-23. In addition, "the Space Operations Career Management Group (SOCMG) is an Air Force wide forum chartered to address issues affecting the Space Operations career field and environment."<sup>11</sup> The SOCMG is co-chaired by HQ USAF and HQ AFMPC and meets annually.

How does the Air Force manage the promotion opportunities for its space operations personnel? Basically, no differently than it does the other career

CAREER FIELD - SPACE OPERATIONS			AFSC - 20XX	
YEAR GRD	PRIMARY	ALTERNATIVE	BREADTH/EDUCATION	
20	LTC	SQUADRON COMMANDER DIRECTOR OF OPERATIONS DIVISION STAFF CHIEF	JOINT/DEPT STAFF	SSS
19				
18				
17				
16	MAJ	DETACHMENT COMMANDER DIRECTOR OF OPERATIONS SPACE OPS CREW CMDR (IMMC, SSC, NMCC, FALCON AFS)	JOINT STAFF DEPARTMENTAL STAFF MAJCOM STAFF	ISS
15				
14				
13				
12	CPT	STAN/EVAL OFFICER SPACE OPS INSTRUCTOR (CUST, 1B13 COTS, OR SO) SPACE OPS CREW CMDR (COVERSEAS LONG OR SHORT)	WING STAFF SQUADRON STAFF PROGRAM MGT (PROVIDES OPS PERSPECTIVE TO SPO)	PROFESSIONAL BROADENING TOUR ROTC/OTS/BMTS/SOS, RECRUITING SERVICE MASTER'S DEGREE MAJIT SPACE OPS OR LOCAL ON-BASE PROGRAMS SOS
11				
10				
9				
8	1LT	SPACE OPS CREWMEMBER		1B13 COTS UST STUDENT FORMAL YMC
7				
6				
5				
4	2LT	SPACE OPS CREWMEMBER		
3				
2				
1				

FIGURE 1

# 20XX MANNING HISTORY/GROWTH END OF FISCAL YEAR



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• PERCENT MANNING

FIGURE 2

fields in the Air Force. One of the objectives of the officer promotion system is "to select officers through a fair and competitive process that advances the best qualified officers to positions of increased responsibility and authority."<sup>12</sup> Therefore, space operations officers compete against all other officers for promotion. The table in Figure 1 is a guide for space operations officers on the types/levels of jobs, education, and career broadening experience that need to be followed to ensure career progression. The "roadmap" in Figure 1 also needs to be followed to ensure competitiveness for promotion. The bottom line for promotion though is "demonstrated leadership abilities and performance of primary duties."<sup>13</sup> This applies to all Air Force officers, regardless of their career fields.

Let me now turn to the Army and Navy. How do they manage their space operations personnel? I need to point out here I couldn't find any written documentation on how they manage their space operations personnel, so I relied on interviews with their personnel people. There are a number of similarities between the Army's and Navy's management of space operations personnel. First, neither service has a space operations career field. This may be partly due to the relatively small number of space billets each service has (for example, the Navy only has a total of 283 space billets, and the Army has less than 200 total space billets). Related to this, there just aren't enough positions for a newly commissioned officer to progress through an entire career in space. I believe, though, the Army and Navy do not have space operations career fields also because of the way they view the space mission

--- as a force enhancement to Army and Naval forces. For example, one of the primary functions of the Navy, as outlined in JCS Pub 0-2, is "to conduct such land, air, and space operations as may be essential to the prosecution of a naval campaign."<sup>14</sup>

This, then, leads to assignment policies. Officers in the Army and Navy are taken "out of their career fields" for a space operations assignment, but are then expected to return to their primary career field after that assignment. In fact, because of their promotion systems, staying out of one's primary career field too long may hurt an officer's opportunity for promotion. How do the respective personnel systems "track" their space operations personnel? The Army has established an additional skill identifier. The Navy also has established Space Systems Operations and Space Systems Engineering designators in its personnel system.

How about space education? The Army has no formal space education. The Navy does offer Space Systems Engineering at the Naval Postgraduate School in Monterrey, California. As a result, most Army and Naval officers have to attend Undergraduate Space Training at Lowry AFB prior to beginning their assignment at U.S. Space Command.

### Pros and Cons

What are the pros and cons of how the services manage their space operations personnel? I'll start with the Air Force again. The biggest pro for the Air Force is it ensures there is a large pool of space operations experts now, and for the future. Officers have the opportunity to dedicate their whole careers to space operations, as outlined in Figure 1. The biggest con for the Air Force is the lack of other operators ("warfighters" such as fighter, bomber, transport personnel) cycling through the space operations arena. Not that it never happens. It's just rare. The impact of these, I believe, is there are few space operators who are experts in what other operators need in the mission area of force enhancement. The other impact is there are few Air Force "warfighters" who are experts in space operations. Again, this impacts the space mission of force enhancement.

How about the pros and cons for the Army and Navy? I think the pros and cons mirror the Air Force pros and cons. The biggest pro is the constant cycling of warfighters through the space operations arena. This aids the mission of force enhancement in two ways. First, it ensures warfighter influence into the space operations arena, and secondly, when these officers return to their career fields, it ensures some space operations influence into the warfighting arena. The biggest con with this approach is it leads to having very few space operations experts. How many Army and Naval officers



can ever achieve 5, 10, 15 years of space operations experience? Probably none.

### OVERALL ASSESSMENT

How can I assess the different ways the services manage their space operations personnel? The first question to be asked is in terms of what? In terms of promotion statistics? Career opportunity? How "happy" the personnel are? I believe the best way to assess the effectiveness of how well the services manage their space operations personnel is in terms of mission accomplishment. How well is U.S. Space Command accomplishing its mission now? Does U.S. Space Command have enough people, the right people in terms of education, training, and experience to accomplish its mission?

First, what does U.S. Space Command need in terms of people? I contend it needs a core of space operations experts --- people who really understand space operations and have extensive space operations experience. I believe the Air Force is currently providing the core of experts. I also contend, though, that U.S. Space Command has to have resident "warfighters" who can influence space operations --- in essence they can tailor space operations for the force enhancement mission. The warfighting commands, the unified and specified commands, also need to have space operations personnel who can influence the warfighting arena. This is one of the big pros I mentioned for the Army and Navy.

However, there's obviously a tradeoff here. It probably takes at least 6 months to get officers new to space operations "up to speed" on space operations (including attendance at UST). After the 6 month break-in period, officers then attain 2 1/2 years of space operations experience followed by their return to their primary career field. This is not only expensive, but it also puts U.S. Space Command in the mode of continually devoting resources to bringing a significant number of personnel up to speed in space operations. This, then, is the tradeoff. Perhaps over time, as more and more warfighters cycle through space operations and as they rise to command positions, the warfighting commands will become more and more knowledgeable and will incorporate space more into their warfighting missions. This should help U.S. Space Command in accomplishing its force enhancement mission.

What, then, is the bottom-line, the overall assessment? I believe the services are managing their space operations personnel exactly in accordance with their services' views of space missions. Which is the way it should be. Why are there such differences in the way the Air Force, Army and Navy manage their space operations personnel? The first reason for this is the difference in the services themselves. Their personnel systems, efficiency reporting systems, promotion systems, etc., are different. The second reason, I believe, is the difference in how the services view the different space missions. I believe all the services emphasize the force enhancement mission (support for land, sea, and air forces). However, the Air Force has also emphasized space support, space control and force application -- more so than the Army

and Navy. Thus, the services' different views of space operations have led to different management philosophies.

Why do the services have different views of space operations? Because I don't think it's clear at all where we're going in space, from a national security strategy perspective. A lack of a clear national sense of direction leads to a lack of a clear DOD sense of direction, which leads to the services going in different directions. Which isn't the way it should be.

Will U.S. Space Command have enough people, the right people in terms of education, training, and experience to accomplish its mission 5 to 10 years from now? The answer to this question may well be the best assessment of how well the services are currently managing their space operations personnel. I don't believe the current management policies of the services will provide enough people, the right people. More importantly, I don't believe the current national space policies will provide enough people, the right people. I will next address what I believe to be a plausible scenario for the year 2000 --- what I call Space 2000.

### Space 2000

What will the U.S. military space program be doing in the year 2000? What space missions will U.S. Space Command be performing in the year 2000? What will the status be of the U.S. space industry in the year 2000? What will

the space threat be in the year 2000? The scenario I'll portray will attempt to address these questions.

Potentially, Japan and Europe will be the major space powers in the year 2000. The number of significant space-faring nations will have grown substantially from only 10 in 1991. This will have tremendous military impact because it is highly likely that any potential military adversary of the United States in the year 2000 will have a robust military space capability --- space-based command, control, and communications; space-based surveillance systems; space-based navigational support to air, land, and sea forces; space-based weapons; and, the ability to seriously degrade U.S. space-based capabilities. These capabilities will significantly affect any U.S. military strategy for waging war with a potential adversary.

Let's take a look at the potential U.S. military space program in the year 2000. It is inferior to that of our potential adversaries. Severe budget cuts in the early 1990s combined with service bickering over space missions have devastated the U.S. military space program. No new satellites have been launched since the mid 1990s. The current space systems are old, long since exceeding their expected service lives, are not state-of-the-art technology, and have gradually been degrading since the mid 1990s. There is virtually no U.S. space launch capability left. The Space Shuttle is nearing retirement, with no follow-on capability available. With the retirement of the shuttle, NASA will be deactivated. The U.S. has no anti-satellite capability. U.S. Space

Command has shrunk by 80% in terms of personnel, and is now a USAF specified command. The Army and Navy Space Commands were deactivated in the mid 1990s. The unified and specified commands now rely on space systems only for communications, managed by the Defense Communications Agency.

The U.S. space industry is extinct. The combination of federal budget cuts in the early 1990s with the growing foreign competition in the 1990s drove the U.S. space industry out of business by the mid 1990s. In the year 2000, Mitsubishi and Toshiba are the leading space industry giants of the world. The U.S. government now has to rely on foreign firms to procure any new space systems.

This is a very depressing scenario indeed. Unfortunately, I believe it is plausible. I also believe we are at a critical juncture right now in the United States relative to space. It is imperative we get our act together --- where we're going in space, and where we want to be in the year 2000, and beyond.

#### RECOMMENDATIONS

1. The United States needs to have a clear national space strategy. The National Space Council, under Vice President Quayle, "is charged with bringing coherence, continuity, and commitment to our efforts."<sup>15</sup> I hope they succeed, for I do not believe we currently have coherence, continuity,

and commitment. Reflecting this, quoting from an October 28, 1991 article in The Washington Post:

The administration's plan to develop a new, improved National Launch System to supplant the shuttle after the year 2000 was cut to the bone, from \$175 million to \$28 million. . . . The congressional budget-cutters also said in a report that they 'deeply regret' trimming all but a token \$5 million from NASA's \$72 million share of a joint project with the Defense Department to develop a National Aerospace Plane.<sup>16</sup>

2. The Department of Defense also needs to have coherence, continuity, and commitment relative to space, and needs to delineate specific responsibilities to each of the services. This then will provide much-needed guidance to the services that will serve as the foundation on which they manage their space personnel. In my opinion, in the JCS Pubs I reviewed, the services' responsibilities are not clearly delineated as to who does what relative to space.

3. Related to the previous recommendation, the Department of Defense needs to develop a space doctrine. Again quoting General Kutyna, "Desert Storm was the first campaign-level combat operation in which space was solidly integrated into combat operations and was vital to the degree of success achieved in the conflict."<sup>17</sup> Now's the time to codify the lessons learned from Desert Storm into space doctrine. We haven't fought a war in

space yet, but with the ever-increasing number of space-faring nations, it's only a matter of time before we'll have to. We need to be ready.

4. Space education and training needs to be revitalized and reemphasized. This is especially true in the unified and specified warfighting commands. My own experience has been there are very few personnel in these commands who understand space, and what space can do for them. This is reflected in their lack of the use of space in their exercises, and in their operational plans. We need to fix this... as soon as possible. If operational commanders don't understand space, don't exercise and train with space, and therefore have no confidence that space will be there when they need it, then we'll have failed in the space force enhancement mission. To this end, I recommend U.S. Space Command consider establishing operational detachments at each of the unified and specified commands. The missions of these detachments will be to enhance space support to these commands.

5. The Army and Navy should consider lengthening the assignments of their space operational personnel by perhaps one year. This will enable U.S. Space Command to get an additional year of "payoff" from these officers after the break-in period. Also, with reduced personnel turnover, it will reduce the amount of resources and effort devoted to breaking-in new personnel.

6. The services should continually look at all the space billets currently filled by uniformed personnel, and consider converting some of these billets to

civilian positions (government service personnel). Emphasis should be placed on those key positions where extensive space operations experience is necessary.

7. Finally, I do not recommend the creation of a new service, a United States Space Force. During my research, I read a number of papers advocating the creation of a United States Space Force. I feel strongly we shouldn't do this for the following reasons. First, we don't need a separate space service. What unique functions would this service perform that are not already being performed today? We do need, and have, a unified command for space, the U.S. Space Command. Second, a separate space service would not promote jointness in my opinion. Quite the opposite, I believe it would hurt jointness relative to space support to the Air Force, Army and Navy. Thirdly, with the upcoming DOD budget cuts, I believe it is totally inefficient and makes no sense at all to create a new space service.

## SUMMARY

The purpose of this paper was to provide a comparative assessment of how the Air Force, Army, and Navy manage their space operations personnel. The biggest difference I found was the Air Force treats space operations as a separate career field, whereas the Army and Navy do not. The biggest similarity I found was that each service appears to be managing its space operations personnel exactly in accordance with its views of its space mission.



But, the services have different views of space operations, which has led to different management practices.

I believe that the biggest problem we have today is a lack of national "coherence, continuity, and commitment" relative to our space efforts. We also have a lack of coherence, continuity, and commitment relative to our space efforts within the DOD. We need to fix these problems. We need to get a clear consensus on the military use of space, and what our goals are for the year 2000, and beyond. Then, the services can manage their space operations personnel to meet these goals.

Finally, I believe we are at a critical juncture relative to space. The time to get our act together is now. Otherwise, we may not have the right people in terms of education, training, and experience to accomplish the space mission in the year 2000. Quoting General Kutyna,

People have always been and are now our top priority. As we enter an era of austere funding, continued support should be directed to those highly capable forces, motivated men and women who are key to a U.S. deterrent. The restructuring of the defense budget must not be at the expense of our people. While some personnel reductions will be required, the people who remain must continue to be well-supported. Erosion of the personnel support system would ultimately impact U.S. Space Command's readiness and operational capability.<sup>18</sup>

## ENDNOTES

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3. "We Lead Today, But What About Tomorrow?", Defense 91, (July/August 1991) 29.
4. *Ibid.*, 25.
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15. National Security Strategy of the United States, (Washington, The White House, August 1991) 22.
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